

[10191/994]

METHOD FOR STORING MESSAGES ON A CHIP CARD, AND DEVICE
FOR CARRYING OUT THE METHODFIELD OF THE INVENTION

Background Information

The ~~invention~~ ^{present invention} ~~is based on~~ relates to a method for storing and playing back a message, an electrical device for playing back the message, and a chip card, according to the species defined in the independent claim.

BACKGROUND INFORMATION

Electrical devices, in particular, automobile radio devices, which have a record/read unit for chip cards, are already known. These so-called "key cards" have hitherto been used to store a code, device password data, or TOM (turn-on or turn-off message), and output it when the key card is used in the device. The TOM is displayed via a display after the device is powered up. This notification, which, for example, can be an item of information about the device, hitherto needed be written onto the memory card with a special read/write device. It is therefore not possible for the user to use the TOM for individual messages.

SUMMARY OF THE INVENTION
Summary of the Invention

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The method according to the present invention having the characteristic features of the independent claim has, in contrast, the advantage that an individual message can be input via a microphone into the electrical device, digitized therein, and stored on a chip card which has been introduced into the device. A stored message of this kind can be retrieved by the user and is generally played back acoustically. This manner of storing and playing back a message has the advantage that the user, for example, in a

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motor vehicle, is not distracted from driving but rather can listen to the information without interruption. The capability of entering an individual message via a voice input creates the capability of storing the information in the form of a trip log.

The features set forth in the dependent claims make possible an advantageous development of and improvement to the method recited in the independent claim.

It is particularly advantageous that the message stored on the chip card can be reproduced by way of the device with which the input was also accomplished. Alternatively, the chip card can be removed from the device and the information stored on it can be output in a further external device. The chip card thus assumes the function of a notepad or dictation device. The message can be retrieved and transmitted upon power-up or power-down. It is furthermore advantageous that the message can be played back acoustically or via a display.

Since the storage volume of the chip card is limited, it is advantageous that in the case of a voice input, the available memory space on the card is displayed.

6 25 An ~~The~~^A automobile radio device according to the present invention
~~having the characterizing features of the independent claim~~
has the advantage that an acoustic input of messages becomes
possible by a simple expansion of previously existing
capabilities for reading chip cards. For this purpose, the
30 automobile radio device according to the present invention has
a circuit which allows it to differentiate among acoustic
inputs via a broadcast transmitter, a cassette recorder, or
the attached microphone.

The features set forth in the dependent claims make possible an advantageous development of and improvement to the electrical device recited in the independent claim. It is particularly advantageous that the electrical device has two storage capabilities, the one storage capability being accomplished via the memory of the chip card.

~~Brief Description of the Drawing~~

PRIEF DESCRIPTION OF THE DRAWINGS

An exemplary embodiment of the invention is depicted in the drawings and explained in more detail in the description below. FIG. 1 shows the schematic layout of an automobile radio device according to the present invention.

DETAILED DESCRIPTION
~~Detailed Description~~

FIG. 1 shows an exemplary embodiment of an automobile radio device according to the present invention. Automobile radio device 9 has a record/read unit 3 for a chip card 1, generally a multifunction card. Chip card 1 possesses, in addition to the contact surfaces, at least one memory module 2. Radio receiver 8, voice recognition module 6, cassette device 12, and a memory 5 are connected to control system 4 via a circuit 13. When acoustic data are input via microphone 7 of the device or a cassette deck 12, a circuit 13 must mute the respective other acoustic sources and connect only the desired input capability to the control system. First, the voice must be coded and digitized. Commercial voice modules 6 are available for this step. Control system 4 recognizes a voice input, and instead of storing the digitized information from voice module 6 in an internal memory 5 of the device that may be present, writes it into memory module 2 of multifunction card 1. If a chip card is not concurrently present in the device when a voice input occurs, the information is buffered

by appropriate software and written onto the chip card later. When memory card 1 is removed from device 9, the user has a transportable notepad whose data can be retrieved again in any other output device. For example, memory card 1 can also be 5 read out in a stationary device 10 which possesses a chip card reader unit 3 and a capability for analyzing and playing back the data.

The length of the recorded message depends exclusively on the 10 size of the memory module on the multifunction card. The card memories available at the moment allow only short messages, but development is leading toward memory volumes of 16 and 32 megabytes. It is advantageous for the user if the amount of available memory on the chip card is displayed. The user can thereby recognize when the memory has been filled. This kind of voice input monitoring can be implemented via a simple time measurement. Output of the data contents can be accomplished via a conversion back into voice and a loudspeaker 11, or via 15 a display.

The method according to the present invention can also be used for automobile radio devices which do not have a voice module or a microphone. In this context the memory card is written to by an external write device which has a microphone and voice 25 digitization system, and read out by the automobile radio device. Playback of the stored information, for example via a voice output 11, is accomplished on the basis of a microprocessor. Many processors can already generate voice outputs.

30 Acoustic output of the memory contents of the chip card can be used, in uncomplicated fashion, for personal greeting or in order to play back safety information. The message stored in the chip card memory can be retrieved automatically when the

device is powered up. Alternatively, the information can be retrieved at any time by actuating suitable buttons. The information on the chip card is transportable, so that the chip card can serve as a dictation device. During use in a motor vehicle, there exists the capability of using the card as a trip recorder. It is possible, for this purpose, to automatically store the time on the card along with the relevant information.

10 TIM (traffic information memory) automobile radio devices, as
a ^{described in} ~~known from~~ German Patent No 37 21 279, offer ideal conditions for
 the method according to the present invention, since a voice
 module for voice digitization is already present in them.